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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,904	01/31/2001	Mamoru Takahashi	1155-0214P	8530

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/23/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/744,904

Applicant(s)

TAKAHASHI ET AL.

Examiner

Rip A. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) 13-77 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☒ Claim(s) 1-77 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This office action follows a response filed on July 24, 2003. Applicants have amended claims 1 and 3-12 to correct matters of form.

#### *Claim Objections*

1. Claim 12 is objected to because of the following informalities: The claim states that "each X" may be bonded to one another to form a ring. There is general agreement with Applicant's statement that the skilled artisan would immediately know which members of X can form rings and which ones can not. Therefore, the skilled artisan would realize that *some* of X may form rings. Removal of the word "each" would alleviate this matter. Appropriate correction is required.

2. Claim 12 is objected to because of the following informalities: The claim indicates that component (b) is optional but not an essential component. Elucidation is requested. It is not clear how transition metal component (a-1) alone is capable of effecting polymerization in absence of co-activator.

*Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,194,341 to Canich *et al.*

Example M6 of Canich *et al.* shows an ethylene polymer with a molecular weight distribution of 2.4. No short chain branching was detected by <sup>13</sup>C NMR spectroscopy. Since zero branching satisfies the claim requirement of less than 0.1 methyl/hexyl branches per 1000 carbon atoms, the subject matter of the present claims is anticipated by the prior art.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

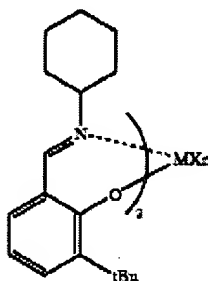
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-12 are rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 6,309,997 to Fujita *et al.*

Fujita *et al.* discloses polymers produced by polymerization of C<sub>2-30</sub>  $\alpha$ -olefins such as ethylene, 1-butene, and 1-hexene (col. 119, lines 55-57; col. 120, lines 45-47). These may be used singularly or in combination of two or more kinds (col. 120, lines 48-49). Moreover, the authors indicate that the term "polymerization" used in the text is not limited to homopolymerization, but it also includes copolymerization (col. 9, lines 51-55). As such, the copolymers recited in the present claims are well within the scope of the invention. The polymers are prepared from a catalyst containing (A) a transition metal complex and (B) at least one compound selected from the group consisting of (B-1) an organometallic compound, (B-2) an organoaluminum oxy-compound, and (B-3) a compound which reacts with (A) to form an ion

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pair (claim 1, *inter alia*). In particular, transition metal complexes shown in the reference (*i.e.*, col. 38, reproduced below, as well as cols. 42, 45 and 46) contain an aliphatic hydrocarbon containing at least 5 carbon atoms in the R<sup>1</sup> position and a hydrocarbon substituent in the R<sup>6</sup> position, as required by the limitations of the present claims recited in present claim 12.



The reference does not provide an example of a polymerization run using the aforementioned transition metal complexes. However, it would have been obvious to one having ordinary skill in the art to use these compounds for such a purpose because their use is adequately disclosed in the text. The skilled artisan would have had a reasonable expectation of success in using these compounds for making the ethylene (co)polymer of the present claims.

The reference is silent with respect to both microstructural features and physical properties of the polymer. Nonetheless, a reasonable basis exists to believe that the materials prepared by the compounds taught by Fujita *et al.* (*supra*) would exhibit the recited properties because the polymer produced therein is prepared in essentially the same manner as that described in the present claims. One having skill in the art would appreciate that same materials prepared by the same method will exhibit the same chemical and physical properties. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

***Response to Arguments***

8. Previous claim objections except (iii) and (iv) from paragraph 7 have been withdrawn.

9. Applicants traverse the rejection of claims 1, 10 and 11 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,837,764 to Akagawa *et al.* and the rejection of claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,096,841 to Sacchetti *et al.* Applicant's arguments have been considered, and accordingly, the rejection has been withdrawn.

10. Applicants traverse the rejection of claims 1-12 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 6,309,997 to Fujita *et al.* Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

11. The rejection of claims 1-12 under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 0 874 005 to Fujita *et al.* has been withdrawn.

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The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure. The following references have been cited to show the state of the art with respect to methyl branching in ethylene (co)polymers.

U.S. Patent No. 6,297,338 to Cotts *et al.*

U.S. Patent No. 5,849,823 to Kale *et al.*

U.S. Patent No. 5,631,069 to Wooster *et al.*

U.S. Patent No. 5,272,236 to Lai *et al.*

U.S. Patent No. 4,438,238 to Fukushima *et al.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

ral

October 16, 2003



DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
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